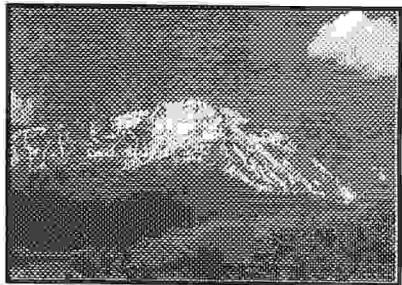




# Ø-Beat



Vol. 51

December 2001

No. 12

## Christmas Party!

I don't know if we'll have Santa at our Christmas party, but we'll have the party nevertheless! The 2001 PPRAA Christmas Party will be held at the Springs City Church (same place as last year) starting at 1830 hrs on Friday, 14 December 2001. The party will serve as the December club meeting. There will be an alcohol-free social period from about 1800-1830, followed by a very short (thankfully) business meeting.

Food! Plenty of food! Ham & turkey will be provided by the club. We'd like each of you to bring your favorite food or holiday recipe. As a suggestion, those with call suffixes A-L should bring a side dish, like a salad, veggies, potatoes, etc. Suffixes I-P should bring bread, rolls, butter, etc. All others should bring the desserts!

The church is located 1250 Vondelpark Drive, which is on the Northeast corner of the intersection of Vondelpark Drive and Holland Park Drive.

If you can help with the setup, come by at about 3 pm to help! The church will open at 5:30 pm for those arriving early with food. We have full kitchen at our disposal. If you'd also like to prepare a turkey, that'd be great. Please get with Sid K4ARM to coordinate.

Also, as in years past, we will be collecting nonperishable food items (canned items, dry items such as rice or beans, etc., for donation to a local Care-and-Share-type facility. An extra door prize ticket will be given to each person who brings a donation item. After the festivities, if you can, please stay around to help clean up, tear down, etc.

If there are questions or comments, please contact Sid, K4ARM at 495-4147 or by e-mail at [k4arm@arrl.net](mailto:k4arm@arrl.net), or any other officer or board member. Contact information for each of us is in the current Ø-Beat on page 2. Now, where will the reindeer park!?



Gary Heitzmann KC0EIK gets ready to put in an order to his elves at the North Pole via his HT. (Of course, he'll have to use a repeater or two, or maybe OSCAR (Orbiting Santa Claus with Amateur Radio)!

Photo courtesy of the Cheyenne Mtn Rptr Group E-mail Reflector

December Program is the Christmas Party!

**Meetings** Our monthly meetings are normally held on the 2nd Wednesday of each month at 7 pm at Mount Calvary Lutheran Church, 1318 N. Circle Drive, about 1/2 way between Platte Ave and Constitution Ave on N. Circle. Our Annual meeting is in October. Check the web site for any changes.

#### Regular License Exam Sessions

Our ARRL VEC test sessions are on the 2nd Saturday of even numbered months at 0900 at the Denver Technical College, 3245 International Cr, across from Memorial Park. Contact Erik KGØXE for details.

Examinees need to bring (1) \$10, preferably a check or money order payable to ARRL/VE; (2) picture ID; (3) the signed original and a copy of your current amateur radio license and CSCEs you have (we keep the copies); and (4) a pen, pencil, and calculator if needed. Memory calculators will be checked.

**PPRAA Web Page** See it at <http://www.qsl.net/ppraa/>. Thanks to Rick Brown KØSU, our webmaster and reflector maintainer.

#### Get on the PPRAA E-mail Reflector

Stay on top of new or short-fused developments. Send e-mail to [majordomo@qth.net](mailto:majordomo@qth.net); within the body type "subscribe **ppraanet**".

**PPRAA Simplex Net** All amateurs are invited to join us on Thursday evenings at 1900 on 146.58 MHz simplex for our club net. Get the latest club and regional happenings!

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#### **Upcoming Club Programs**

Dec ..... Christmas Party!  
Jan ..... Homebrew Night / Show and Tell



**Articles for the Ø-Beat** Deadline for articles or ads for the January issue is Dec 24. Submit articles by e-mail, US Mail, telephone or in person to the editor. Editor reserves right to correct for readability, grammar, spelling, punctuation and length.

**Nonprofit Organization** The PPRAA is a federal 501(c)(3) nonprofit organization and welcomes all contributions. Your contributions/ donations may be tax-deductible.

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## Club and Local News

# ALL 2002 MEMBERSHIP DUES ARE NOW DUE!

Since we're almost all on the annual plan now, the easy way to let you all know to renew is via the *Ø-Beat*. The annual membership dues are \$15 for full members, \$18 for family memberships, \$12 for senior family memberships, and \$10 for senior members. Most everyone's membership now expires on December 31. There are some exceptions. There are one or two of you that have expiration dates already in 2002 or even 2003. You don't have to renew until your membership expires; at that time you can extend to December 2002.

### **Women Represent Amateur Radio at Black Forest Homemakers Club**

de KE6WUW Nancy Murphy

On Thursday, Sept. 11, Rosie WAØMNL, Ginger NØUOD, and Moe WBØRTF presented a program to the women of the Black Forest Homemakers Club. The club has been active in the Black Forest area for 80 years, and has always had an emphasis on community service. Learning about amateur radio, the adventure and scope of it, was something new to most of the attendees.

Each of the women shared how they got started in amateur radio, how long they have been involved in ham radio, and some of the activities in which they have participated. All had learned code, and have advanced in the complexity of what they do. Talking around the world was definitely fascinating, especially Rosie's contact with the Vatican and the numerous QSL cards that were displayed, including from Russian ships during the cold war. For those of us living in Black Forest, cell phone contact is not available (yet), so radio becomes a valuable asset in emergencies. Ginger's convoluted contact with a stranded young lady in Calhan during the blizzard of '97 was a dramatic example of how people can be found and rescued in tough circumstances. And Moe talked about the running of a net. Rosie listed a number of events and emergencies that amateur radio people have been involved in over the years. It was a little like walking down memory land for the club ladies, all of whom were unaware of the role amateur radio had played in those events. All in all, the club can be proud of the presentation by these members.

### **Ham Radio Classes in January!**

de KBØRKW Linda Hedges

Once again it is time for the annual ham radio classes and time for the PPRAA to get the word out to anyone that might be interested in attending them.

These classes will be open to everyone interested in becoming a ham radio operator and will include all the necessary theory to obtain an FCC amateur radio license. A test session will also be included as part of the class structure.

**Dates**  
**January 8 thru February 7, 2002**  
**Every Tuesday and Thursday Evening**

**Times**  
**7:00 PM to 9:00 PM**

**Location**  
**El Paso County**  
**Office of Emergency Management**  
**305 South Union Blvd**  
**(Enter at east end, go down one floor)**

**PRE REGISTRATION IS REQUIRED**  
**BY JANUARY 5, 2002**

All materials needed to take the classes will be available for purchase at the first class. Handouts will be given out free of charge. A \$10.00 license fee will be charged to take the FCC licensing examination.

**CONTACTS**  
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 or Barbara McNally – NØBAM  
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 or  
 Linda Hedges – KBØRKW (kb0rkw@juno.com)  
 (719) 683-7828

## Public Service & Emergency Communications

The PPRAA is an ARRL Special Services Club, but it is not an emergency services club itself. The PPRAA supports all amateur radio involvement in public service and emergency communications in any way it can, including reporting activities happening in the region. These columns are based on available knowledge of the editor, and the opinions expressed are not necessarily the opinions of RACES, ARES, Skywarn or any other organization, or their leadership. Logos used with permission.

### RACES



<http://www.qsl.net/epcraces/>

VHF Net Tuesdays at 1930 on 146.76 MHz

CMRG repeater

Tony Dal Lago KC4VMB, RACES Officer

At the last meeting, Skee Hipszky NØPRY gave a great presentation on winter survival. If you couldn't attend, we have a video tape of the presentation. Thanks to Jody/KAØROZ, Les/KCØNC, Rob/N7LV and George/WØGHL for coming out and keeping an eye on the weather and smoke. We got to practice using the field weather kits, George used the Kestrel 3000, and we even had the opportunity to use the 800-MHz radios. Jim Mesite/KCØFIB shot some video for us. And Jeff NØWPA and Bob AEØB shot some airborne video, but no one on the ground was able to receive it at the site.

### ARES



<http://www.qsl.net/ppares/>

VHF Net Tuesdays at 1900 on 146.97 MHz

PPFMA repeater

Wes Wilson KØHBZ, EC

By the time you read this the ARRL/NWS Skywarn Recognition Day event will be finished. Hopefully we'll get a run-down on that event for next month's newsletter. Maybe a picture or two. Aaron KD6FLM reports that MacVan has their 2000 maps at 50% off. If you've never seen this store, head out for the deals. The Map Store is at 929 W. Colorado Ave. ARES ID cards have been issued to quite a few ARES folks. The next session will be in Woodland Park. No word on future sessions beyond that. Contact the EC for further details.

### President's Corner

de KØSU Rick Brown

I write this still being stuffed from Thanksgiving turkey (okay, it's leftovers, but still Thanksgiving turkey). I hope all club members and their families had an enjoyable day and are looking forward to the holiday season. It is during this time of year that I'm often reminded how close the ham radio community really is – like another part of my family. While it's a busy time of year, I know a lot of planning is going on for club activities. The first swapfest planning meeting for 2002 has already taken place and I think it will be another great one for the PPRAA. Although this is a quiet time of year for public service some folks are already looking ahead to Skywarn training and other related activities. One of our members is already looking into the planning for an ARRL convention in 2003. Wow! Wouldn't it be great to have an activity of that importance here in Colorado Springs! Other folks are taking it easy, operating traffic nets, working DX, trying out new modes, and in general doing all the wonderful things hams do. It's exciting to be a part of such an active club and to learn new things at just about every meeting we have! I hope many of you will bring your family and attend the coming Holiday Party and enjoy an evening of fellowship. I am certainly looking forward to it!



As mentioned in the minutes, Ben NØLNW placed an order for new club patches. If you'd like one, contact Ben or Sid K4ARM. The patches sell for \$5.

## Tech Talk

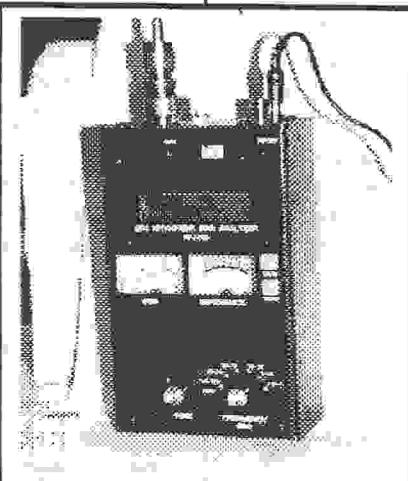
### The Electronic Swiss Army Knife

de W3SRL Steve Lane

[This article is reprinted with permission from the WashRag, newsletter of the Wireless Association of South Hills, PA ([www.washarc.org](http://www.washarc.org))] Every once on a while a piece of ham equipment comes along that falls into the "must have" category. The MFJ-269 and related models of antenna analyzers certainly qualify for this distinction. Small and compact, about the size of a common building brick and just loaded with many features commonly used by hams and communications professionals alike. Oh, and reasonably priced as well. Personally, I equate my MFJ-259 to my trusty "Swiss Army" knife in terms of overall usefulness and utility. Not perfect to be sure, but extremely useful for a myriad of small jobs. Once you own one, you'll never want to be without one again.

Ok, so what is so special about this little black box? Well, out of the package one immediately notices the standard-issue MFJ no-frills black matte aluminum finished case, prominent metering and LCD display. Everything is well marked and the unit has a solid feel to it. The case has to be opened to insert the batteries (10 AA cells, either alkaline or rechargeable-type) by means of removing 8 tiny Phillips screws. If you wish, you can power the unit from an external 12v source, but that can be cumbersome up on top of a tower or roof! Once the batteries are in, you are in business.

The MFJ-259 has a number of very useful functions as listed in the table below. Due to space constraints, I'm only going to showcase the most common one in this month's article.



Antenna SWR Impedance	Phase (degrees)	Impedance (Z)
Cable length in feet	Inductance (uH)	Resonance (MHz)
Cable loss in dB	Reactance, or X (ohms)	Return Loss (dB)
Capacitance (pF)	Resistance, or R (ohms)	Signal Frequency (MHz)

The first, and most often used function of the MFJ-259 analyzer is just as the name implies. Analyzing antennas. The MFJ-259B has a 1.8 through 170 MHz operating range, accessed in 6 ranges from the front panel selector. Let's run through a typical tune up of that VHF mobile mag-mount antenna that your buddy just gave you.

After you put the antenna up on the center roof of the car and checked to make sure there were no nearby obstacles, such as garage roofs/ doors, tree branches, etc. you simply connect the coax to the analyzer. Select the proper frequency range, and turn the analyzer on. The display will come to life, and the meters will swing. Turn the "tune" knob until you measure the lowest possible reading on the "SWR" meter. Say the "SWR" meter reads 1.7:1, and the impedance meter reads right around 50 ohms. Then read the frequency indicated on the LCD display. The reading you just took is the resonant frequency of the antenna. This is the frequency where the antenna is most efficient. For the sake of this discussion, let's say that is reads 155.400 MHz.

That's right in the middle of the itinerant business band, and about 9 MHz off from where we want it to fall for 2 meters. No problem.

Shut the analyzer off, but leave it connected. Locate the little set screw(s) that hold the whip portion of the antenna into either the base loading coil or the base itself. Use a magic marker

to mark the exact position of the whip as it is inserted into the base. That way, you can always go back quickly to your original setting if you wish. Since the antenna is "cut" for 155 MHz now, and you want it to be resonant right around 147 MHz for 2 meter repeater use, which way do we want to go with the antenna? If you said to lengthen it, you were correct. By loosening the set screw, and lifting the whip up about a 1/2-inch and then tightening it again, the analyzer now reads 153.210 or so. At least you are going in the right direction. The SWR also dropped, it is now 1.3:1 at the lower frequency. So out comes the screwdriver again, and the whip is raised again, this time about 3/4-inch more. That is all the longer the whip is; There is just barely enough whip inside the base to make contact with the set screw. This time though, the analyzer reads a flat 1.1:1 at 149.120 MHz. Still not in the ham band, But probably close enough to work pretty well on 2-meters. Huh? Read on.

The second measurement we are going to take is the usable bandwidth of the antenna. Sometimes referred to as the 2:1 band width. As the name implies, we want to know just how broad an operating range we have to work with. Start by again putting the analyzer on the resonant frequency of the antenna. Write down the frequency and the SWR reading. Next, slowly "walk" the tune control of the analyzer clockwise until the SWR meter just rests at 2:1.

Write this frequency down as well. Then walk the tune knob counter-clockwise until the meter dips at the resonant frequency and then climbs back to 2:1 in the opposite direction. Write this frequency down also. Subtract the lower frequency from the higher one, and the result is the useable bandwidth of the antenna. In other words, this is the range of frequencies that you can expect to use this antenna on without experiencing really poor performance, damaging the rig, or both. For the sake of argument, let's say this antenna wound up at just under a 4MHz useable bandwidth. If so, you are in business! While not absolutely perfect for 2-meters, it is pretty close.

For the most perfectionists out there, let's look at this again. The best SWR we could get was at 149.120 MHz, and we couldn't raise the whip any more to get it any lower. The low 2:1 reading was right around 147.500 MHz and the upper reading was 151.150 for a useable 2:1 bandwidth of 3.65 MHz. That means that as long as we stay in the upper repeater sub band of 2 meters, where the shift is a PLUS 600 kHz we should be OK. If we go below 147.500 on the transmit frequency, the SWR may be excessively high. Your only option here is to get a longer whip to replace the one you have and then start this whole process over again. If the antenna were originally too low in resonant frequency, of course you would be dropping the whip deeper into the base, and possibly cutting SMALL increments off the bottom end of the whip. 1/8- to 1/4-inch increments here only. It is very easy to wind up with a whip that is too short if you get too rambunctious with the cutters.

**Note:** A stainless-steel antenna whip **WILL** damage even the most stout of wire cutters if you try to use them to shorten your antenna. Either use bolt-cutters, or use a file to nick the whip in the proper place and then use a vise and a pair of vise-grips to snap off the end. A file can then be used to deburr the end.

As a final check, you may or may not wish to use an old-fashioned wattmeter to double-check the analyzer's readings. They are usually very close to each other, enough so that it doesn't make a bit of difference. Again, as long as you can keep the reflected power down to about 10 percent of the forward power, then you should be OK. Some folks obsess themselves with having the perfect 1:1:1 match all the time, which is certainly a desirable thing; the only problem is, that every time you QSY, your carefully tuned antenna is no longer perfectly resonant. Think about it!

The thing that most hams ask when they first see one of these devices used as I just described is simply "Hey that's really neat. But I can already do the same thing with my rig and my wattmeter!" That may be true, but you may be putting your rig under a LOT of strain if the antenna is way out of whack, and the process is a lot more time consuming. Especially if the rig is down in your basement shack, and the antenna is up on your

roof or tower! The antenna analyzer and a short coax jumper can go up onto the roof or tower with you and make life much, much easier for you!

Well, as you might have guessed, the MFJ-259 analyzer has earned a permanent place in my tool box. It is small, rugged and very useful. Priced right around \$250.00 MSRP, they can often be found for considerably less at hamfests and on the internet swap groups. The WASH club just happens to own one for use by its members. Just ask to see who has it and sign it out for that next antenna project!

### **CRA Repeater Back OTA in COS**

de N7LV Rob Roller

The latest Colorado Repeater Association newsletter reports that the COS link of the CRA system on Cheyenne Mountain on 145.160 is now back on the air! The CRA reports that they installed a VHF antenna mounted on new tower, a new UHF link antenna installed on tower, a new link radio (GE MASTR II) and a new controller (SCOM 7K).

### **Choose Your 2M Frequency Wisely**

de KBØCY Bob Witte

You've just purchased your first 2M FM transceiver and have been chatting with both old and new friends around town on the 2M band. You and your buddies decide to find an out of the way frequency to hang out on. After tuning around, you find a nice, quiet frequency that no one seems to be using and start operating there. Nothing to worry about, right? *Not so fast, there are a few more things to consider when selecting a frequency on the 2M band. Let's take a look at the key issues.*

#### **FCC Rules**

The first thing we need to know are the frequencies that the FCC has authorized for our particular license class. For the HF bands, the frequency privileges depend greatly on the license class of the operator. Above 50 MHz, the frequency allocations are the same for Technician licenses and higher. In particular, the 2M band extends from 144 MHz to 148 MHz. The FCC Rules say that any mode (FM, AM, SSB, CW, etc.) can be used on the band from 144.100 MHz to 148.000 MHz. The FCC has restricted 144.0 to 144.100 MHz to CW operation only.

#### **Band Plans**

Knowing the FCC frequency authorizations is a good start but we need to check a bit further. Amateur radio operators use a variety of modulation techniques to carry on communications. Often, these modulation techniques are incompatible since a signal of one type can't be received by a radio set to another modulation type. For example, an SSB signal can't be received on

an FM receiver (and vice versa). We need to use our authorized frequencies wisely by sharing the band with other users and avoiding unnecessary interference. Thus, it makes sense to have a *band plan* that divides the band up into segments for each type of operation.

### 2M Band Plan

As shown in the table, the 2M amateur band plan supports a wide variety of radio operation. Large portions of the band are dedicated to FM operation, consistent with the popularity of the FM mode. There are portions of the band designated for repeater *outputs* (which is the frequency that we tune to receive the repeater) and repeater *inputs* (which is the frequency we transmit on to use the repeater). Notice that these segments are positioned 600 kHz apart consistent with the standard 2M repeater offset. There are also frequencies designated for FM simplex.

<u>2M Band Plan</u>	
<i>As approved by the ARRL VHF-UHF Advisory Committee, simplified by KB0CY to reflect usage in Colorado.</i>	
144.000-144.100	CW
144.100-144.275	Single-sideband (SSB Calling Frequency = 144.200)
144.275-144.300	Propagation Beacons
144.300-144.500	OSCAR (satellite)
144.500-144.900	FM Repeater Inputs
144.900-145.100	Packet Radio
145.100-145.490	FM Repeater Outputs
145.500-145.800	Misc. and experimental modes
145.800-146.000	OSCAR (satellite)
146.010-146.370	FM Repeater Inputs
146.400-146.580	FM Simplex (National Simplex Frequency = 146.52 MHz)
146.610-147.390	FM Repeater Outputs
147.420-147.570	FM Simplex
147.600-147.990	FM Repeater Inputs
<i>Note: The FM channel spacing in Colorado is 15 kHz (repeaters and simplex).</i>	

On the low end of the band, we see segments for some of the more exotic modes. At the very bottom is the CW portion, which includes Earth-Moon-Earth (EME) operation. EME operators communicate by bouncing their signals off the moon.

Further up the band, we see segments for SSB operation and beacon operation. SSB is the preferred voice mode for so-called "weak signal" operators. The mode is more efficient than FM when signals are weak, so it is the way to go when you are trying to push the limits of 2M DX. Beacons are transmitters that are always on, transmitting a short CW message to as a propagation

indicator for distant stations. We often think of 2 Meters as a local coverage band but when conditions are right, contacts can be made with stations over a thousand miles away. Of course, conditions are not always right so having a beacon on the other end of the desired communication path lets you know how propagation is in that direction.

Radio amateurs also use 2 meters for OSCAR satellite operation, sending signals *to* a satellite (uplink) or receiving signals *from* the satellite (downlink). The OSCAR segments don't specify a particular modulation type since CW, SSB and FM are all used for OSCAR operation. Because of their elevation above the earth, satellites can hear signals from all over the US simultaneously, so they are very susceptible to interference.

Most of this non-FM operation can be easily interfered with by signals from other users. EME signals, for example, are usually quite small since the signal has to make the round trip from the earth to the moon and back. If a local FM operator fires up in the EME portion of the band, an EME signal that can't be heard by an FM receiver can be wiped out by the FM signal. Similarly, an operator chatting across town on 2M could interfere with a satellite hundreds of miles away and not know it. This is particularly a problem with FM receivers, which won't even notice low level CW and SSB signals.

### FM Operating

The most common 2M rigs are basic FM mobile or handheld transceivers. These radios usually tune the entire 2M band from 144 MHz to 148 MHz in 5 kHz steps. The band plan indicates the proper range of frequencies for FM operation but there is more to the story. FM operation is "channelized", meaning that specific 2M FM frequencies are identified by the band plan. The use of channels is especially important for repeaters, since they don't easily move around in frequency and are coordinated to minimize interference. The idea is to have all stations use frequencies that are spaced just far enough apart to accommodate the signal without interfering with the adjacent channels.

You might think that the spacing between channels would be 5 kHz, which is the tuning step of most FM radios. This doesn't work because an FM signal occupies a bandwidth that more than 5 kHz wide. Even though we talk about a signal being on a specific frequency, the signal actually spills out on either side of the frequency by about 8 kHz. This means that a typical FM signal is about 16 kHz wide.

(You may recall that amateur 2M FM uses  $\pm 5$  kHz frequency deviation. So doesn't this mean the bandwidth is 10 kHz? No, it doesn't work quite that way and the signal is actually wider than 10 kHz. I might be able to show the math behind this but it makes my head hurt. Perhaps in some future article.)

The channel spacing needs to be at least as wide as the bandwidth of the signal, which allows room for each signal without interfering with the adjacent channel. In Colorado, the channel spacing is 15 kHz, which is a bit tight for our 16 kHz-wide signal. In other parts of the country, a 20 kHz spacing has been adopted to provide for more separation between channels. Obviously, you get more channels on the band with 15 kHz spacing than with 20 kHz, but you have to put up with more adjacent channel problems.

When using a repeater, you just need to dial in the published repeater frequency and set the transmit offset, either + 600 kHz or - 600 kHz. Most modern 2M radios automatically take care of setting the proper offset (based on the band plan). If you need to set the offset manually, the rule is very simple. If a repeater's output frequency is in the 147 MHz range, it uses a + 600 kHz offset. Otherwise, it requires a - 600 kHz offset.

For simplex operation, the standard simplex frequencies listed in the table below should be used. These simplex frequencies are grouped in the 146 MHz and 147 MHz range as listed in the table below. The National Simplex Frequency (also referred to as the calling frequency) is 146.52 MHz.

#### 2M FM Simplex Frequencies Colorado Band Plan

146 MHz Range	146.400, 146.415, 146.430, 146.445, 146.460, 146.475, 146.490, 146.505, 146.520, 146.535, 146.550, 146.565, 146.580, 146.595
147 MHz Range	147.405, 147.420, 147.435, 147.450, 147.465, 147.480, 147.495, 147.510, 147.525, 147.540, 147.555, 147.570, 147.585

#### The FCC View on Band Plans

Sometimes I here radio amateurs say, "Band plans are voluntary so I don't need to pay any attention to them. I can do whatever I want as long as I don't break the FCC rules." Unfortunately, such an attitude does not promote efficient use and sharing of the amateur bands. Imagine the chaos on the ham bands if everyone took this approach. It also may be a violation of FCC rules.

On Oct 18, 2000, in a ruling concerning a repeater operator's failure to conform to the prevailing band plan, FCC Special Counsel for Amateur Radio Enforcement, Riley Hollingsworth commented on the issue. He said "Band plans minimize the necessity for Commission intervention in Amateur operations and the use of Commission resources to resolve amateur interference problems. When such plans are not followed and harmful interference results, we expect very substantial

justification to be provided, and we expect that justification to be consistent with Section 97.101."

Section 97.101 is the part of the FCC rules that says (among other things):

*In all respects not specifically covered by FCC Rules each amateur station must be operated in accordance with good engineering and good amateur practice.*

and

*Each station licensee and each control operator must cooperate in selecting transmitting channels and in making the most effective use of the amateur service frequencies.*

The FCC has clearly stated that they expect hams to share the bands by following accepted band plans. More importantly, this is the right thing to do for the benefit of the amateur radio service.

#### Summary

The fine points of the band plan can be a bit confusing. However, a few simple guidelines can help, especially if you are operating only FM. FM voice simplex and repeater operation should occur only above 145.100 MHz (and only in the OSCAR subband if you are working an FM satellite) When operating through a repeater, make sure you are tuned to the published repeater frequency with the right transmit offset. When operating simplex, use a simplex frequency designated by the band plan.

We've only covered the 2-Meter band in this article. If you are operating on other bands, be sure to check the appropriate band plan before transmitting. Note that this article is written for amateur radio operation in Colorado. Other locations may have different band plans for the 2M band.



From All of Us, to All of You ...  
Happy Holidays!

## Club Business

### Board Meeting Minutes

de NØMIK Mike Allen, Secretary



The November 19, 2001 PPRAA Board of Directors meeting was called to order at 7:00 PM by President Rick Brown, KØSU at his home. Other board members in attendance were Sid K4ARM, Aaron KD6FLM, Jerry ADØA, Rob, N7LV; Ron NKØP; and Mike NØMIK. Club members Russ KBØFNM, and Rosie WAØMNL were also present. Rick began by noting that \$258.23 is needed to reimburse Ben NØLNW for the club patches. Discussion then focused on the Christmas party. Sid K4ARM is heading up the planning for the party, which will be held on December 14<sup>th</sup>. Set up will begin at 3:00 PM. Ham, turkey, coffee, punch, hot water, and cranberry sauce will be provided. \$100 was allocated for door prizes. Rosie WAØMNL will present a skit along with anyone else who wants to participate. A sing-along similar to last year's is also being looked into. Results of the questionnaire published last month indicated that a majority of the respondents would consider a club station and a meeting night that would accommodate it. Sid K4ARM will look into the new Fire Department building on Printers Parkway and the Office of Emergency Management as possible meeting sites. Rob N7LV noted that the *Ø-Beat* would be available on the web beginning in Jan and would contain an updated membership application. The update would have a place for applicants to indicate areas of interest. Ron NKØP gave an "Annual Report" for the treasury. Membership income totaled \$1,758. *Ø-Beat* publication totaled \$1,723. Total Net for the year was \$400, which indicates the club treasury depends heavily on the Swapfest. There was \$175 in cash donations and \$50 interest on the various accounts. A potential increase in dues will be discussed in January. Aaron KD6FLM is working with Mike KØTER to schedule the inventory of club property. Jerry ADØA has been asked by Jeff NØWPA (ARRL Section Liaison) to head up the Division convention in 2003 and is looking for capable committee chairmen. Rosie WAØMNL noted that the club needs to take care of the tower and antenna that Faye KBØQI (SK) had donated to the club as part of her estate. Rick and Ron stated that it is easiest to sell an antenna that is installed and will look into a possible buyer. Rick announced the Sean NØCT would assume the chairmanship of the Activities Committee. January's program will be homebrew/show-and-tell night. February's program will be a talk by the ARRL Section Liaison to the CO state government. The next Board of Directors meeting will be held at Ron NKØP's home, and the January BOD meeting will be held at Rob N7LV's home. The meeting adjourned at 8:23 PM. de Mike Allen NØMIK Secretary

### General Meeting Minutes

de NØMIK Mike Allen, Secretary

The meeting was called to order by the president, Rick Brown KØSU at 7PM. 46 members and guests were in attendance. After introductions, a motion to accept the minutes of the last meeting passed unanimously. Committee reports began with an announcement by Rick that we need an Activities Chairman. Les KCØNC, Membership Chairman, noted that the club has 209 members, of whom 127 are ARRL members. He also solicited membership renewals for next year. Doing double duty as Programs Chairman, Rick KØSU announced the next three month's programs. They are as follows: December, the club Christmas party; January, Homebrew Night where members can bring in any homebrew project no matter how old; February, a talk by the CO ARRL Section Government Liaison. This last program has not been confirmed as yet. Bob KIØGF, the Swapfest Chairman, announced that the name would be changed to Megafest 2002 for next year, and that the first planning meeting would be held on the last Saturday of the month at the CSPD Falcon Substation on Goddard St, just off N. Academy. Rob N7LV did double duty as Education Chairman and *Ø-Beat* editor. He announced Technician classes would be starting January 8<sup>th</sup> and run for 5 weeks. Interested parties should contact Linda KBØRKW or Frank KFØWF. Frank added that if there were enough committed students who would stay for the entire course, he would also teach a code class as well. Rob presented the results of his e-mailed question asking if members would like to have the *Ø-Beat* available on the web. He had 15 responses, evenly split for and against. After discussion among members where it was noted that putting *Ø-Beat* on the web would be cheap publicity, as well as a way to stay in touch with past members, and reduce the number of paper copies, a decision was made to make *Ø-Beat* available on the web. Tom NØNTX, the AMSAT Chairman, announced the launch of PCSAT from Alaska which has an APRS on board. PCSAT announces itself on 144.39 MHz. Moe WBØRTF, CCARC Chairman said there had been no recent activity on the council, but that the next meeting was scheduled for next April. Finally, Ron NKØP gave the Treasurer's report. Income of \$83.87 and expenditures of \$150.80 over the last month leaves the club with \$3,922.24 in the checking account. Announcements began with Moe WBØRTF noting that the Lunch Bunch meets every Friday at 1130 at Home Town Buffet in the Mall of the Bluffs, 3650 Austin Bluffs. Ryan KCØGLQ reminded us of the PPRAA Simplex net which meets every Thursday at 1900 local on 146.58 MHz. Dan KBØPPM thanked the membership for helping with this year's JOTA and that he would have certificates for all who participated. He said he'd like to do the same program next year. He also noted

that the Cheyenne Mountain HS radio club is in need of coax, a rotor and rotor cable. Ben NØLNW announced the National Weather Service special event to be held Nov 30 to Dec 1 at the NWS offices in Pueblo. Mike WV7T had a couple of tables with lots of good stuff for sale and give-away in the back of the meeting and invited everyone to take a look and take some of it home with them. There was no Old or New Business. The Hammy this month was presented to Dan KBØPPM for his tireless work with JOTA. After the break and door prize drawing, Dick K2LCT gave an overview of the Global Positioning System (GPS) satellites. The meeting adjourned at 8:38 PM. . de Mike Allen NØMIK, Secretary

### **Treasurer's Report**

de NKØP Ron Deutsch, Treasurer

Inflows included \$2.87 in interest, and \$83 in memberships. Outflows included \$140.80 for Ø-Beat and \$10 for misc office supplies, for a net outflow of \$64.93.

### **Membership Committee Report**

de KCØNC Les Borst

#### **Please welcome these New Members**

CHRISTOPHER MYERS ..... KL1DY  
DOUGLAS J. MYERS ..... KL1DJ

#### **Goodbye to the following members**

ROBERT KUEGEMANN ..... KCØIVW

#### **Total Number of Members**

202

### **Ø-Beat To Be Available on Web**

de N7LV Rob Roller

In January you'll have the opportunity to get the Ø-Beat off the web. There'll be a link to it from the PPRAA web page. The Ø-Beat has been available in electronic form for about two years now, and it seems to be a success. The nice feature is that it's in color! Some of you have been getting it as an e-mail attachment, and more recently, I've been making it available via the web.

That just hasn't been publicized due to an earlier decision to keep it close hold. But the thinking has changed a little. It all boils down to what you believe the club is about. Is the club only a newsletter? Or is it a club where you can socialize with the members, do good things for ham radio and the community, and learn more about ham radio? Do you want everyone to know how great the club is?

If the latter, then we're in agreement. At Nov club meeting we talked about the newsletter being a way for the club to let the rest of the community know what's going on, and to also provide a medium of recruiting new

members, as well as former members that may have moved away but want to keep in touch. We know that the newsletter will be read by non-PPRAA hams, but that can't be a bad thing. Years ago, the club distributed the Ø-Beat to stores around town. We hope that potential members will read the Ø-Beat and be inclined to join the club. I don't expect a mass exodus of members that are thinking that "Oh Boy! The Ø-Beat is on the web for free!" If that happens, then I'd have to wonder about that, and we'd consider taking the Ø-Beat off the web. Other newsletter editors that post their newsletter to the web have said that they've had no bad things happen to their membership. In fact, they've seen an increase, and some of that increase may have been attributed to the newsletter availability.

So take a look at it, and enjoy. If you want to get your Ø-Beat that way permanently, contact Les KCØNC and he'll withhold the paper version, helping to curb our rising costs. But remember you'll always have the option of going back to paper. The monthly file will always be at <http://www.qsl.net/ppraa/0b/0-beat.zip> It doesn't work yet, though. Try it in early January.

### **Congratulations to ...**

de N7LV Rob Roller

Congratulations to Eric Campbell KCØGYM (and to the rest of the Air Academy High School Marching Band) for placing third in the state marching band competition. Eric plays saxaphone in the band when he's not on his radio (actually, it's more like he barely can find time to get on the radio because all of the band practice and schoolwork!)

### **Two Local Hams Hospitalized**

de N7LV Rob Roller

Around October 29 Mike Proctor KBØIAP went to the hospital because he felt like he was having a heart attack. Doctors soon told him he did indeed have one. After multiple bypass surgery, Mike was released several days later and is recovering well. Coincidentally enough, the next report of a heart attack came from Mike, but Mike was reporting that Warren Hickey WØYNE had a heart attack. Warren had the attack while visiting family in Illinois on November 24. At press time Warren is still in IL recovering. All reports indicate he is doing fine. Both Mike and Warren are active in emergency communications. Warren has also served on the PPRAA board of directors in recent years. Our thoughts and prayers go out to Mike and Warren for a full recovery.

# Pikes Peak Region Ham Radio Event Calendar

December 2001 / January 2002 – Please see Page 2 for Points of Contact

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 NWS Field Day
2	3	4	5	6 Colo Connection Xmas Party	7	8 MARC Xmas Party PPRAA VE Testing
9	10	11	12 PPRAA Mtg	13	14 NO Lunch Bunch	15
16	17 Board Meeting	18	19	20 RACES Mtg	21	22
23	24 ZB Deadline	25 Christmas	26	27	28	29
30	31	1 Happy New Year	2	3	4	5 MARC VE Test
6	7	8	9 PPRAA Mtg	10	11 Lunch Bunch	12
13	14 Board Meeting	15	16 MARC Mtg	17 RACES Mtg	18	19
20	21	22	23	24	25	26
27	28 ZB Deadline	29	30	31		

*Questions about any event on this calendar? Something missing? Contact a Board Member!*

## Membership Application for the Pikes Peak Radio Amateur Association, Inc.

P.O. Box 16521, Colorado Springs, CO 80935-6521

Date: _____	<input type="checkbox"/> New Member <input type="checkbox"/> Renewal	In which activities would you like to participate?
Name: _____	<input type="checkbox"/> Field Day <input type="checkbox"/> Demonstrations <input type="checkbox"/> Nets or round tables <input type="checkbox"/> Organize activities <input type="checkbox"/> Teach ham classes	
Address: _____		
City: _____ State: _____ Zip: _____		
Call: _____ Class: N T + G A E Phone: _____	<input type="checkbox"/> Full Member \$15: <input type="checkbox"/> Family Membership \$18: <input type="checkbox"/> Over 65 \$10: <input type="checkbox"/> Over 65 Family \$12: <input type="checkbox"/> Associate \$12: <input type="checkbox"/> Ø-Beat Only \$12: <input type="checkbox"/> ARRL Membership \$39: <input type="checkbox"/> Donation to Club: \$_____	
Mbr of ARRL? <input type="checkbox"/> Yes <input type="checkbox"/> No E-mail: _____		
Additional Family Members to Join/Renew:		
Name: _____ Call: _____ Class: _____ ARRL? _____		
Name: _____ Call: _____ Class: _____ ARRL? _____	Total Enclosed: _____	
Name: _____ Call: _____ Class: _____ ARRL? _____	<u>MAKE ALL CHECKS PAYABLE TO "PPRAA"</u>	
<p>Please indicate how you'd like your Ø-Beat delivered: <input type="checkbox"/> Standard hardcopy via U.S. Mail          (Defaults to standard hard copy, in the event that NO check boxes are checked) <input type="checkbox"/> As a PDF file attachment via e-mail, to help save a few bucks  <input type="checkbox"/> I'll save the club a few bucks and download it from the Web!</p>		
<p>Circle your interests <input type="checkbox"/> HF / V/UHF / FM / SSB / Digital / DX / Contests / Technical / Hardware / Other</p>		
<p><b>Join the ARRL via the PPRAA!</b> Send your ARRL membership application form and your check for the amount due to the ARRL to the PPRAA. Make the check payable to the PPRAA. The PPRAA will forward your renewal form to the ARRL. The PPRAA earns \$15 for each NEW ARRL MEMBER that joins through the PPRAA!</p>		
New and renewing members must submit a completed application form along with your check to the Treasurer. Please Type or Print Clearly!		

**ALL NEW MEMBERSHIPS AND RENEWALS WILL BE PRORATED TO EXPIRE IN DECEMBER!!**

## RadioActivities!



### Lunch Bunch

The next **Lunch Bunch** is Jan 11.  
Whoa! Did that say January!? Yes!  
There is **NO Lunch Bunch** in  
December, due to the PPRAA

Christmas Party! We'll resume in January at Home Town Buffet (Austin Bluffs & N Academy), 1130-1300. (*Always the Friday following the club meeting.*) Moe WBØRTF is now coordinating the Lunch Bunch !!

### Hamfest Horizon

- **May 17-19:** Dayton Hamvention, Dayton Ohio. 937-276-6930. P.O. Box 964, Dayton OH 45401-0964. [www.hamvention.org](http://www.hamvention.org)
- **Jun 1:** PPRAA Megafest 2002! Probably in Monument, but the deal hasn't been struck with the school yet. Stand by!! [www.qsl.net/ppraa](http://www.qsl.net/ppraa)

**Jess Miley** KØTAA  
**719 W 7th, Florence, CO, 81226**  
**719-784-3040**

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